Red and Bonita Mine – Bulkhead Proposed Design Changes and Site Preparation

June 26, 2015

From: Steve Way, OSC

To: File

Subject: Meeting Summary - Onsite June 25, 2015 (MES (Will), L-7 (Kurt), DRMS (Allen), EPA (Steve W) and ER (Matt))

Following the underground inspection conducted MES, L-7 and DRMS, a meeting was held to discuss the findings of the inspection and to review bulkhead design elements and site preparations:

1. The findings underground indicate that no ground support improvements are required to perform the bulkhead construction at 275 ft inby of the portal on the main Eastward drift. Some barring / scaling may be needed but it was limited at most.

2. Ventilation – bags (lay-flat duct) is down in a couple locations and will require restringing wire and hanging bag. Some water has accumulated in the bag, but it appeared usable. Air monitoring performed by DRMS indicated that oxygen levels remained at 19.8 % or higher up to the 275 ft without performing mechanical ventilation.

3. Injection Pipe (inby of bulkhead):

    a. The proposed injection pipe can be modified to use HDPE (1 inch), possibly 100 ft sections to be joined prior to placing underground.
    b. The line extended to the dry-side and through the bulkhead shall be adjusted accordingly.
    c. The final distance for the injection pipe inby of the portal shall be determined before materials are purchased and may be based on any potential limitations created by the need for ground support beyond the bulkhead site. Should it be deemed appropriate to place support sets in order to place the injection pipe, then EPA will determine the need to go beyond that point or not with the injection

pipe.

d. A riser and possible 'T' shall be used to finish the pipe inby-end.

4. Drainage Pipe (temporary): Following the construction of the coffer dam/by-pass pipe placement;
    a. a drainage line shall be placed on the flow to contain mine drainage to the portal pond during the construction of the bulkhead. The specifications call for an 8 inch pipe; however, this may be reduced in size, if necessary , and using two lines.
    b. MES indicated that this feature was likely to be an obstruction and it is not necessary because the adit floor will be power washed. It is unlikely that adequate removal of precipitate residual present from the bulkhead site out can be achieved to prevent problematic discharge of suspended solids given the nature of this water and mine conditions.
    c. The plan for managing the water includes the discontinuation active water treatment / filtering following the muck-out operations.

5. Form construction changes: Several options for changing the materials and layout of the forms were discussed. These included using laminated 2 x 12 dimensioned lumber versus 8 x 8 timbers, longer channel steel on the walls, and other minor differences in configuration. These details were reviewed with DRMS and MES following the main meeting discussion. While overall these changes were agreed to onsite, it was agreed that these proposed changes shall be provided in writing to ER, LLC and EPA and DRMS prior to MES mobilizing to receive approval - unless the specifications already allow for such modifications. Proposed changes to the rebar installation are being evaluated by DRMS. Otherwise, the forms shall comply with the specifications as issued.

6. Site Access Condition (NOT DISCUSSED ONSITE – response to email): Road access from the county road into the Red and Bonita mine will be improved by ER to ensure level road access, remove pinch points such as the large tree, and widen where necessary. EPA will need to negotiate with the property owner to widen this access road, so the amount of improvement

cannot be promised. The ramp to the work/lay-down pad at the portal is manageable and will not be further flattened. The site was re-worked in the Fall and is significantly improved from past working conditions requiring similar personnel/materials/equipment staging. Modifications to the ramp would either impact the level surface area at the pad or create a longer cut at the top and reduce the area above the portal for staging vehicles. If this requires that the MES equipment be shuttled to the pad, then ER will provide that support using a Loader and pickup truck as necessary.

ER, EPA, and Weston agreed upon the need to minimize vehicles in the upper work area so that as much space as possible is reserved for MES. Caustic will need to be staged for water treatment at the edge of the dump adjacent to the outlet pipe. The caustic will be in 275gal totes. A clear path to this area will be required so that the loader can deliver/remove totes. Otherwise, MES has control of portal work area layout.

7. Portal Access: It was agreed that ER will construct a deck over the existing portal-pond to create a level access into the portal. This is likely to be constructed with treated timbers and 3 x 6 fir lagging or treated lumber. Maximum loading was stated as 4000 pounds. Two options are described below, and MES needs to indicate if they have a preference.

    a. Option one, the deck height will match the threshold elevation of the security gate, and a ramp to the adit floor will be required inby of the gate. The gate opening is just 5 feet at this time. Removing the gate and jams would gain approximately 4 inches width.

    b. Alternatively, the entire gate/grate structure could be removed by ER and the deck will be set to the floor elevation. This provides the advantage of constructability and more maneuvering space on the approach. However, this will require that MES provide an alternative means of securing the portal-pipe each day at shut-down. (Chain-link was suggested, which would be acceptable.)